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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/732,200	12/07/2000	Volker Rasche	PHD 99,179	9483

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EXAMINER	
KAO, CHIH CHENG G	
ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 03/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/732,200	RASCHE ET AL.	
	Examiner	Art Unit	
	Chih-Cheng Glen Kao	2882	

-- Th MAILING DATE of this communication app ars on the cov r she t with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 December 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *07 February 2002* is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *16* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-3, 7, 11, 17, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rattner (US Patent 6,213,638) in view of Kresse (US Patent 4894855) and Jarin et al. (FR 2645007).

Rattner discloses an x-ray device with a source (Fig. 1, #2) and detector (Fig. 1, #3) mounted at an invariable distance on a rigid common holding device (Fig. 1, #1) changed in a plane defined by the supporting members (Fig. 1, #1, b), connected to a supporting or displacement device (Fig. 1, #5) composed of a plurality of hinged, serially interconnected supporting members (Fig. 1, #7) as a robot arm to position completely (Fig. 1, "b", "α". and "β") along 6 axes. The individual supporting members can be individually controlled (Fig. 1, "g" represented by individual motors), while the holding device in the form of a C-arm (Fig. 1) is connected to the holding device by way of a hinge (Fig. 1, #4 and "β"), which rotates about a horizontal axis of the hinge (Fig. 1, "A").

However, Rattner does not seem to specifically disclose plane hinges or supporting members individually controlled.

Kresse teaches plane hinges (col. 2, lines 61-68, and col. 3, lines 1-2). Jarin et al. teaches supporting members individually controlled (Fig. 1 and Abstract).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have the plane hinges to move the holding device of Kresse with the device of Rattner, since one would be motivated to use the hinges to create free accessibility or positioning of the c-arm to the patient when operating the x-ray device as implied from Kresse (col. 1, lines 60-68, and Figure).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to have supporting members individually controlled of Jarin et al. with the device of Rattner, since one would be motivated to have individually controlled members in order to coordinate all movements during an examination (Abstract) as implied from Jarin et al.

Also note that a recitation, such as "members which may be individually controlled", with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

2. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rattner in view of Kresse and Jarin et al. as applied to claim 1 above, and further in view of Hollstein (US Patent 3281598).

Rattner in view of Kresse and Jarin et al. suggests a device as recited above.

However, Rattner does not seem to specifically disclose a hinge connected to the holding device permitting 360 degree rotation about an axis.

Hollstein teaches a hinge connected to the holding device permitting 360 degree rotation about an axis (Fig. 3 and col. 3, lines 21-32).

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to have the rotating hinge of Hollstein with the suggested device of Rattner in view of Kresse and Jarin et al., since one would be motivated to direct x-rays to all directions as shown by Hollstein (col. 3, lines 25-26) in order to obtain an x-ray image from any direction.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rattner in view of Kresse and Jarin et al. as applied to claim 1 above, and further in view of Holmström (US Patent 3,784,837).

Rattner in view of Kresse and Jarin et al. suggests a device as recited above.

However, Rattner does not seem to specifically disclose a holding device composed of at least two holding members for the source and detector.

Holmström discloses a holding device composed of at least two holding members for the source and detector (Fig. 1).

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to prepare the holding device of Holmström with the suggested device of Rattner in view of Kresse and Jarin et al., since one would be motivated to have separate holding members to move the x-ray source and detector as freely as possible around the patient as shown by Holmström (col. 1, lines 6-8) and to keep the x-ray source and detector independently controlled for proper alignment (col. 2, lines 1-9) to send x-rays and obtain a signal.

4. Claims 8, 10, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rattner in view of Kresse and Jarin et al. as applied to claim 1 above, and further in view of Travanty et al. (US Patent 4,987,583).

Rattner in view of Kresse and Jarin et al. suggests a device as recited above.

However, Rattner does not seem to specifically disclose a mechanical contact sensor producing a signal to monitor distance between the examined object and the source or detector with braking when a threshold when the distance is below a threshold.

Travanty et al. discloses a mechanical contact sensor producing a signal (col. 3, lines 63-66) to monitor distance between the examined object and the source or detector (abstract, lines 2-4 and col. 3, lines 50-56) with braking when a threshold when the distance is below a threshold (col. 2, lines 11-14).

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to prepare the mechanical contact sensors producing a signal and braking of Travanty et al. with the suggested device of Rattner in view of Kresse and Jarin et al., since one would be motivated incorporate all those things to protect the examined object or patient from being severely hurt by contact with the source or detector as shown by Travanty et al. (col. 1, lines 38-42, col. 2, lines 11-14).

5. Claims 9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rattner in view of Kresse and Jarin et al. and Travanty et al. as applied to claim 8 above, and further in view of Hinton et al. (US Patent 5485502).

Rattner in view of Kresse and Jarin et al. suggests a device as recited above.

However, Rattner does not seem to specifically disclose software control of the c-arm and ultrasound monitoring of the object and x-ray device.

Hinton et al. teaches software control of the c-arm (col. 5, lines 14-19) and ultrasound monitoring of the object and x-ray device (Abstract, lines 1-3, col. 1, lines 48-53, and col. 12, lines 53-58).

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to have the software control of Hinton et al. with the suggested device of Rattner in view of Kresse and Jarin et al. and Travanty et al., since one would be motivated to have use a computer and software to provide better control of the motion of c-arm so as to follow an efficient path between two positions and to avoid collision between the various elements of that system as shown by Hinton et al. (col. 2, lines 10-15) in order to save time and increase safety.

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to have ultrasonic monitoring of Hinton et al. with the suggested device of Rattner in view of Kresse and Jarin et al. and Travanty et al., since one would be motivated to have use the sensors to avoid collision between the various elements of that system as shown by Hinton et al. (col. 2, lines 10-15, and col. 12, lines 47-53) in order to increase safety.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rattner in view of Kresse and Jarin et al. and Holmström as applied to claim 6 above, and further in view of Yamamoto (JP 06-105831).

Rattner in view of Kresse and Jarin et al. and Holmström suggests a device as recited above.

However, Rattner does not seem to specifically disclose the distance between source and detector, which can change.

Yamamoto teaches the distance between source and detector which can change (Paragraph [0005], and Drawing 2, "E-F").

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to have changing distances between the source and detector of Yamamoto with the with the suggested device of Rattner in view of Kresse and Jarin et al. and Holmström, since one would be motivated to move the detector to the patient as close possible without hitting the applicant as shown by Yamamoto (Paragraph [0005]) for safety purposes.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rattner in view of Kresse and Jarin et al. and Travanty et al. as applied to claim 8 above, and further in view of Ninomiya et al. (JP 11-285492).

Rattner in view of Kresse and Jarin et al. and Travanty et al. suggests a device as recited above.

However, Rattner does not seem to specifically disclose a separate video system to monitor the motion of the c-arm.

Ninomiya et al. teaches a separate video system to monitor the motion of the c-arm (Abstract, Problem to be Solved).

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to have the separate video system of Ninomiya et al. with the suggested device of Rattner in view of Kresse and Jarin et al. and Tranvanty et al., since one would be motivated to

keep track of the movement safely and reliably when they are operated as shown by Ninomiya et al. (Abstract, Problem to be Solved).

8. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rattner in view of Kresse and Jarin et al. as applied to claim 1 above, and further in view of Stivender et al. (US Patent 4358856).

Rattner in view of Kresse and Jarin et al. suggests a device as recited above.

However, Rattner does not seem to specifically disclose a rotating connection point to the room.

Stivender et al. teaches a rotating connection point to the room (Abstract, lines 1-3, and Fig. 2, #13-15)

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to have the rotating connection point of Stivender et al. with the suggested device of Rattner in view of Kresse and Jarin et al., since one would be motivated to include another rotation of axis in a multiaxial apparatus to be able to do substantially all examination procedures while keeping the patient remaining at a constant level in coincidence with an isocenter as implied from Stivender et al. (col. 4, lines 1-5), so the patient does not have to be moved or disturbed.

Response to Arguments

9. Applicant's arguments with respect to claims 1-3 and 5-20 have been considered but are moot in view of the new ground(s) of rejection.

With regards to Kresse, the elements can be viewed as plane hinges (col. 2, lines 61-68, and col. 3, lines 1-2). With regards to Holmström, the elements in the Figure can be viewed as a holding device composed of at least two holding members for the source and detector (Fig. 1). With regards to Travanty et al., the elements taught by Travanty et al. as recited above can be incorporated into an x-ray apparatus (Title).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (703) 605-5298. The examiner can normally be reached on M - Th (8 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

gk
February 25, 2003

SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800